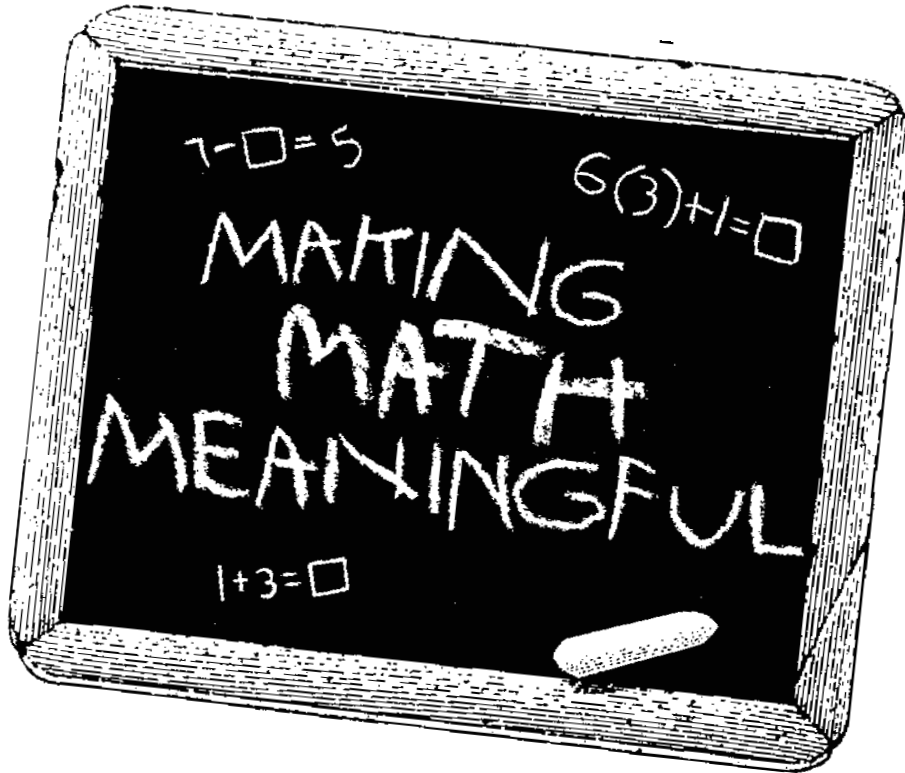


# Level 4 — Student Book

## Revised Edition



by David Quine

The Cornerstone Curriculum Project is the family ministry of David and Shirley Quine. We are dedicated to providing the best quality products at a reasonable price. Our ability to do so is dependent on your support. **Level 4** of Making Math Meaningful consists of a **Parent/Teacher Guide** and a **Student Book**. The Student Book is a consumable book, that is, the student pages are to be written on by your child. Please do not reproduce the student pages. You may purchase additional copies of the Student Book for other children in your family from your local supplier or directly from The Cornerstone Curriculum Project. If you see the Student Book at a used curriculum sale, please do not buy it.

© 1997, 2001 The Cornerstone Curriculum Project

The Cornerstone Curriculum Project  
2006 Flat Creek Place  
Richardson, Texas 75080  
(972) 235-5149

# MULTIPLICATION DIVISION

## CHAPTER 3

- 1 Given a multiplication sentence involving the numbers 0-99 in which the product is unknown, solves it.
- 2 Given a division sentence involving the numbers 0-99, solves it.
- 3 Given a multiplication or division problem, decides whether to multiply or divide to find the solution.

$$97 \times 56 = \square$$

$$567 \div 7 = \square$$

- 4 Given a multiplication or division sentence, writes three other multiplication or division sentences equivalent to the given sentence.
- 5 Given two whole numbers whose product is less than 10,000, finds their product.
- 6 Given a one-digit number and a number less than 1,000, divides the larger number by the smaller using the compact division algorithm

\_\_\_\_\_

Fill in each box with a number in compact notation.

1.  $63(10) =$

2.  $30(100) =$

3.  $54(1,000) =$

4.  =  $81(10,000)$

5.  $54(100) =$

6.  =  $45(1,000)$

7.  $100(100) =$

8.  $28(100) =$

9.  = 72 ten thousands

10.  = 40 hundreds

11. 100 thousands =

12. 35 tens =


13.  = 88 tens

14.  = 48 hundreds

15. 64 thousands =

16.  = 90 thousands

17. Look carefully at problems 1 - 8. For each problem count the number of O's on each side of the equal symbol. Describe the pattern.

Write sentences about each of the apple orchards.  
 The picture of an apple, , will represent one tree.

1.	$\frac{\quad}{\text{total}} (\quad) = \frac{\quad}{\text{total}}$	$\frac{\quad}{\text{total}} (\quad) = \frac{\quad}{\text{total}}$
	$\frac{\quad}{\text{total}} \times \frac{\quad}{\text{total}} = \frac{\quad}{\text{total}}$	$\frac{\quad}{\text{total}} \times \frac{\quad}{\text{total}} = \frac{\quad}{\text{total}}$
	$\frac{\quad}{\text{total}} \div \frac{\quad}{\text{total}} = \frac{\quad}{\text{total}}$	$\frac{\quad}{\text{total}} \div \frac{\quad}{\text{total}} = \frac{\quad}{\text{total}}$

2.

Grouping \_\_\_\_\_

Multiplication \_\_\_\_\_

Division \_\_\_\_\_

3. Bruce's apple orchard has 8 rows with 5 trees in each, for a total of 40 lovely trees.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. Will's orchard has a total of 60 lemon trees. He had planted them in 10 rows with 6 in each row.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

STUDENT PAGE 2 ACTIVITY 3 B

You and your family decided it was time to clean for spring. For each thing you do, tell whether or not you know the total. Write three equivalent sentences. You do not need to solve.

1. You dusted 9 windows.  
Each window has 12 panes.  
What is the total number of window panes you dusted?  
Does the story tell you the total? \_\_\_\_\_

Example:

Grouping:  $9(12) = \square$

Multiplication:  $9 \times 12 = \square$

Division:  $\square \div 9 = 12$

2. Next, your mom asked you to sort a total of 105 books. You arranged them equally among 7 shelves. How many were on each shelf? Does the story tell you the total? \_\_\_\_\_

Grouping \_\_\_\_\_

Multiplication \_\_\_\_\_

Division \_\_\_\_\_

3. Your dad decides to paint your house sky blue. He needs 88 quarts of paint. Each can of paint holds 4 quarts. How many cans did he need? Does the story tell you the total? \_\_\_\_\_

Grouping \_\_\_\_\_

Multiplication \_\_\_\_\_

Division \_\_\_\_\_

From 1820 to 1875, people in the central United States traveled along the Mississippi River in steamboats. The boats had two decks, the lower for cargo and the upper for passengers. Some passenger decks were very comfortable. They had their own bands, libraries, and restaurants. Circle the correct sentences.

1. At New Orleans the *Randy Henderson* picked up 9 bales of cotton. Each bale weighed 47 pounds. What was the total number of pounds of cotton the boat picked up?

$$9(47) = \square \quad 47 \div 9 = \square$$

$$\square = 47 \times 9 \quad 9 \times 47 = \square$$

$$\square \times 9 = 47$$

2. One day in 1877 there was a total of 60 boats docked at the St. Louis piers. At each pier 4 boats could load or unload at one time. If the piers were full, how many piers did St. Louis have?

$$60 \div \square = 4 \quad \square = 4 \div 60$$

$$60 \div 4 = \square \quad 4(\square) = 60$$

$$\square = 4 \times 60$$

3. Captain Tom Leather's boat, the *Natchez*, could hold up to 135 passengers. His boat had 45 staterooms holding the same number of passengers. When the boat was full, how many passengers were in each stateroom?

$$\square \times 45 = 135 \quad \square \div 135 = 45$$

$$45 \div 135 = \square \quad 135 \div \square = 45$$

$$45 \times 135 = \square$$

4. The *Robert E. Lee* had a large dining room. The boat could serve 96 passengers at one time at 8 equal-sized tables. How many passengers could sit at one table?

$$96 \div \square = 8 \quad \square = 96 \div 8$$

$$8 \div \square = 96 \quad 96 \div 8 = \square$$

$$8 \times 96 = \square$$

<b><i>FRUIT PRICES</i></b>	
grapes	1¢ each
plums	2¢ each
strawberries	3¢ each
apples	4¢ each
bananas	5¢ each
peaches	6¢ each
oranges	7¢ each
grapefruit	8¢ each
pineapples	9¢ each

Amount of Fruit

		0	1	2	3	4	5	6	7	8	9
	0								0		
grapes	1										
plums	2										
strawberries	3							18			
apples	4										
bananas	5						25				
peaches	6										
oranges	7										
grapefruit	8			16		32					
pineapples	9										

STUDENT PAGE 9 ACTIVITY 3 C



Solve the sentences below.

$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$  is another way to write  $6 \times 3 = \square$  or  $3 \times 6 = \square$

1.  $\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array}$

8.  $\begin{array}{r} 8 \\ \times 8 \\ \hline \end{array}$

15.  $\begin{array}{r} 9 \\ \times 3 \\ \hline \end{array}$

2.  $\begin{array}{r} 8 \\ \times 9 \\ \hline \end{array}$

9.  $\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$

16.  $\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$

3.  $\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$

10.  $\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$

17.  $\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array}$

4.  $\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$

11.  $\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$

18.  $\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$

5.  $\begin{array}{r} 6 \\ \times 8 \\ \hline \end{array}$

12.  $\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$

19.  $\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$

6.  $\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$

13.  $\begin{array}{r} 8 \\ \times 3 \\ \hline \end{array}$

20.  $\begin{array}{r} 1 \\ \times 1 \\ \hline \end{array}$

7.  $\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$

14.  $\begin{array}{r} 2 \\ \times 7 \\ \hline \end{array}$

21.  $\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$

STUDENT PAGE 10 ACTIVITY 3 C

Multiply the number in the first column. Add the digits in the answer

$1 \times 9 = 09$	$\underline{0} + \underline{9} = \underline{9}$
$2 \times 9 = 18$	$\underline{1} + \underline{8} = \underline{9}$
$3 \times 9 = \underline{\quad}$	$\underline{\quad} + \underline{\quad} = \underline{\quad}$
$4 \times 9 = \underline{\quad}$	$\underline{\quad} + \underline{\quad} = \underline{\quad}$
$5 \times 9 = \underline{\quad}$	$\underline{\quad} + \underline{\quad} = \underline{\quad}$
$6 \times 9 = \underline{\quad}$	$\underline{\quad} + \underline{\quad} = \underline{\quad}$
$7 \times 9 = \underline{\quad}$	$\underline{\quad} + \underline{\quad} = \underline{\quad}$
$8 \times 9 = \underline{\quad}$	$\underline{\quad} + \underline{\quad} = \underline{\quad}$
$9 \times 9 = \underline{\quad}$	$\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 \times 9 = \underline{\quad}$	$\underline{\quad} + \underline{\quad} = \underline{\quad}$

Did you find any patterns in the nines answer?

Can you use these patterns to help you remember the answers when you multiply by 9?

Solve these division sentences.

1.  $6 \div 2 = \square$

2.  $10 \div 5 = \square$

3.  $12 \div 6 = \square$

4.  $9 \div 9 = \square$

5.  $40 \div 8 = \square$

6.  $12 \div 4 = \square$

7.  $7 \div 7 = \square$

8.  $6 \div 3 = \square$

9.  $\square = 12 \div 4$

10.  $\square = 9 \div 1$

11.  $\square = 21 \div 3$

12.  $\square = 45 \div 5$

13.  $\square = 30 \div 6$

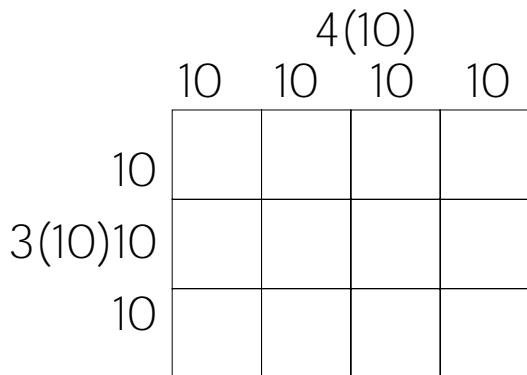
14.  $\square = 42 \div 7$

15.  $\square = 64 \div 8$

16.  $\square = 36 \div 4$

Find the number of trees in each orchard.  
 Draw an array if one is not drawn for you.

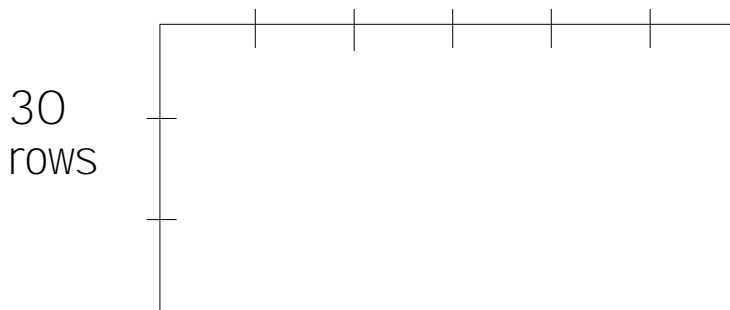
1. Mrs. Bartlett has 30 rows of pear trees with 40 trees in each row. How many trees are in her orchard?



$$40 \times 30 = \boxed{\phantom{0000}}$$

2. Mr. Washington planted 30 rows of cherry trees with 60 trees in each row. How many trees did he plant?

60 in each row

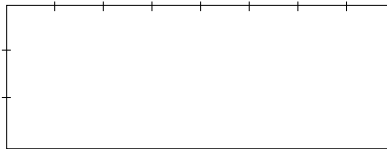


3. Mr. and Mrs. Gerry are quite proud of their large lemon orchard. They have 40 rows of trees with 60 trees in each row. How many trees do they have?

The local soup company offered to purchase one piece of playground equipment for the community park for every 10,000 soup can labels that were collected. The following collections were received. How many were in each collection? Draw an array if one is not drawn for you.

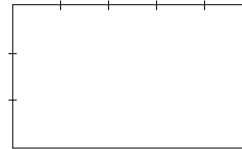
1. Mrs. Clark saved the labels at her cafe. She had 8 bundles with 300 labels in each bundle.

$$8 \times 300 = \boxed{\phantom{0000}}$$



2. Many people brought labels in bunches of 5. The director counted 3,000 bunches.

$$3,000 \times 5 = \boxed{\phantom{0000}}$$



3. The support group brought in 6 boxes with 3,000 labels in each box.

$$6 \times 3,000 = \boxed{\phantom{0000}}$$

4. Jerry grouped his labels by 7. He collected 40 groups altogether.

$$7 \times 40 = \boxed{\phantom{0000}}$$

5. The community Church collection was arranged in stacks of 400. They had 3 stacks.

Array                      Sentence

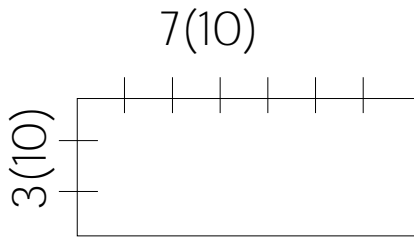
6. A group of children collected labels for one month. They put their collection in 90 bundles with 20 labels in each bundle.

Array                      Sentence

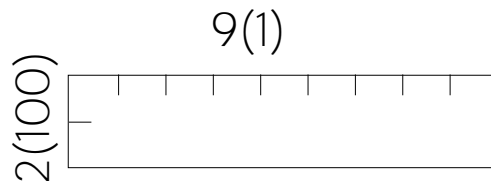
### STUDENT PAGE 20 ACTIVITY 3 D

Use arrays to help you solve each problem.

1. Mr. Martin has 30 pens of chickens with 70 chickens in each pen. Mr. Brady has 9 pens with 200 chickens in each pen. Who raises more chickens?

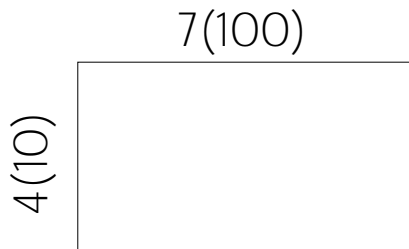


Mr. Martin



Mr. Brady

2. Mr. Krider has 40 chicken houses with 700 chickens in each chicken house. Mr. Berry's farm has 8 chicken houses with 3,000 chickens in each house. Who raises more chickens?



Mr. Krider



Mr. Berry

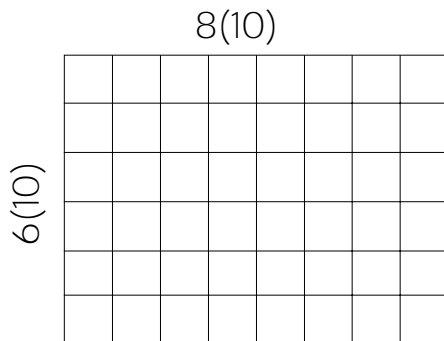
3. The Sutherland's turkey farm is divided into 30 sections with 500 turkeys in each section. The Henderson's turkey farm is divided into 4 sections with 4,000 turkeys in each section. Whose farm raises more turkeys?

The Sutherland's

The Henderson's

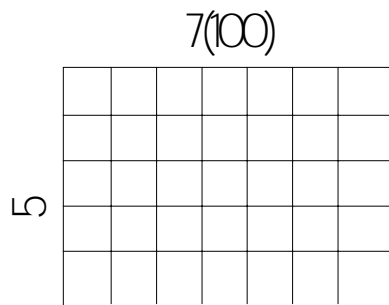
STUDENT PAGE 21 ACTIVITY 3 D

1. 60 rows of lemon trees  
80 trees in each row  
How many trees?



$$60 \times 80 = \boxed{\phantom{0000}}$$

2. 5 rows of avocado trees  
700 trees in each row  
How many trees?



$$5 \times 700 = \boxed{\phantom{0000}}$$

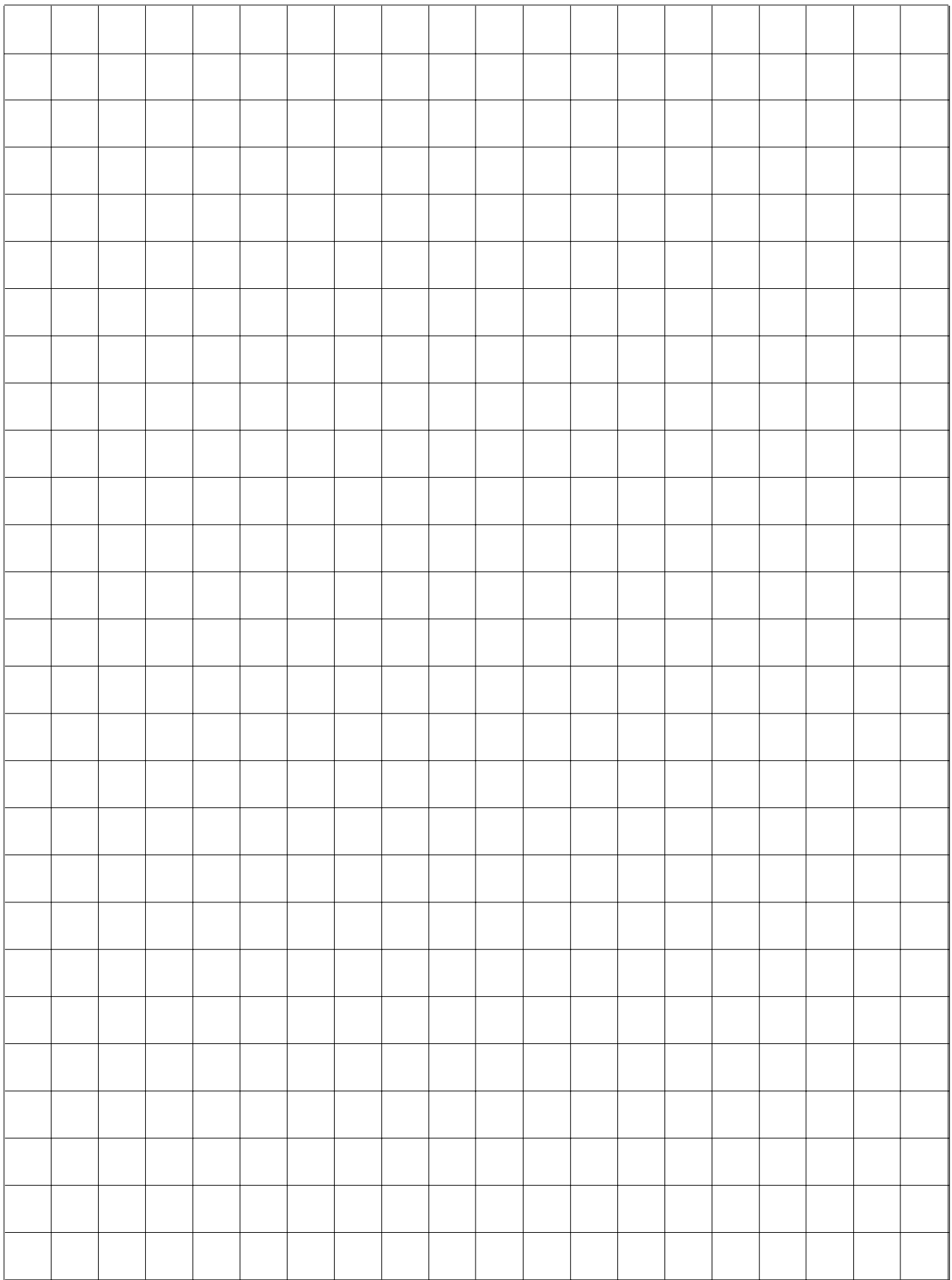
3. 40 parking lots  
800 cars in each lot  
How many cars?

$$800 \times 40 = \boxed{\phantom{0000}}$$

4. 300 different flowers  
700 of each kind  
How many flowers in the garden?

$$700 \times 300 = \boxed{\phantom{0000}}$$

STUDENT PAGE 22 ACTIVITY 3 D





\_\_\_\_\_

Finish this problem. First find the subproduct for each part. The first part is started for you. Then, to find the final product, add the six subproducts.

1.  $23 \times 456 =$

	400	50	6
20	<i>20x 400</i>	<i>20x 50</i>	<i>20x 6</i>
3	<i>3x 400</i>	<i>3x 50</i>	<i>3x 6</i>

$3 \times 6 =$  \_\_\_\_\_

$3 \times 50 =$  \_\_\_\_\_

\_\_\_\_\_

$20 \times 6 =$  \_\_\_\_\_

PRODUCT \_\_\_\_\_

Ben:  $64 \times 83 =$   Subproducts

$4 \times 3 =$	12
$4 \times 80 =$	320
$60 \times 3 =$	180
$60 \times 80 =$	<u>4,800</u>
PRODUCT	5,312

Bryce:  $83 \times 64 =$   Subproducts

$3 \times 4 =$	12
$3 \times 60 =$	180
$80 \times 4 =$	320
$80 \times 60 =$	<u>4,800</u>
PRODUCT	5,312

2. Both Ben and Bryce multiplied  $64 \times 83$ .  
 Were both of their answers right? \_\_\_\_\_  
 Did they find the same subproducts? \_\_\_\_\_  
 What did they do differently? \_\_\_\_\_

3. A jigsaw puzzle has 37 rows of 46 pieces each. How many pieces does it have in all? Write a sentence and use the chart to help you find out.

	40	6	_____
30			_____
7			_____

Product \_\_\_\_\_

Finish these multiplication problems.

1.  $304 \times 607 =$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PRODUCT \_\_\_\_\_

	600	7
300	<i>300 x 600</i>	<i>300 x 7</i>
4	<i>4 x 600</i>	<i>4 x 7</i>

2.  $324 \times 657 =$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PRODUCT \_\_\_\_\_

	600	50	7
300			
20			
4			

Write a math sentence and draw an array to solve these problems.

3. 130 rows  
503 tulips in each row  
How many tulips?

4. 47 book cases  
802 books on each case  
How many books?

Finish dividing these arrays and solve.

1.  $48 \times 96 =$

	90	6	_____
40			_____
8			_____
	Product		_____

2.  $26 \times 17 =$

	10	7	_____
20			_____
6			_____
	Product		_____

3.  $403 \times 25 =$

	20	5	_____
400			_____
3			_____
	Product		_____

4.  $206 \times 509 =$

			_____
			_____
			_____
	Product		_____

5.  $463 \times 26 =$

	20	6	_____
400			_____
60			_____
3			_____
	Product		_____

6.  $529 \times 38 =$

			_____
			_____
			_____
	Product		_____

Draw an array. Divide it into parts to help you solve each multiplication sentence.

1.  $41 \times 52 =$

2.  $36 \times 172 =$

3.  $85 \times 75 =$

4.  $176 \times 82 =$

Write a sentence for each problem. Use the array given to help you solve the problem.

1. The telegraph wire from Galveston to Houston carried news of ship arrivals. The distance from one telegraph office to another is 43 miles. If one mile required 5,286 feet of telegraph cable, how many feet of cable wire required for this distance?

Math sentence: \_\_\_\_\_

	5,000	200	80	6	Product
40					
3					

---

---

---

---

---

---

---

---

---

---

2. The ship Great Eastern laid the first telegraph cable across the Atlantic Ocean in 1866. If the ship laid 15,858 feet of cable each day, how many feet of cable did it lay in a week?

Math sentence: \_\_\_\_\_

	10,000	5,000	_____	_____	_____
7					

Product

---

---

---

---

---

---

---

---

## Anderson's Acres

Solve these problems. But watch carefully. You do not always need to do all the multiplication steps to answer the questions. Draw an array to help you if you need it.

1. Mr. Anderson grows corn on his farm. His silo can hold 1,800 bushels of corn. He hauled 29 truckloads to the farmyard. Each load was 58 bushels. Will his silo hold that much corn?

4. Each pig on the farm needs 26 pounds of feed each week. How many pounds of feed must the farmer buy to feed 72 pigs for one week?

2. Mr. Anderson has 32 bags of seed corn. Each bag has enough seed to plant for 11 acres of corn. Does he have enough corn to plant 300 acres?

5. Mr. Anderson wants to buy a \$15,000 tractor. He has 3,027 bushels of corn to sell \$4 a bushel. Will this give him enough money to buy the tractor or will he need to wait until he has enough money?

3. One summer, Mr. Anderson pumped 1,200 gallons of water each day to water 66 acres of cabbages. Each acre needed 24 gallons of water a day. Did he pump enough water to water all the cabbages?